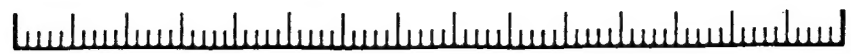




ZERO BEAT



AMSAT

Hampden County Radio Association

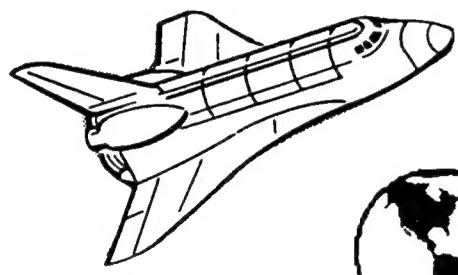
Springfield, MA

April 1985 ARRL Affiliated, 37th Year

Next Meeting

FRIDAY, APRIL 12th

NASA SPACE SUITS:
HOW THEY ARE DESIGNED
AND BUILT FOR USE ON
THE SPACE SHUTTLE!



FRIDAY APRIL 12th

Note that's the 2nd Friday.

Feeding Hills Cong. Church
Center of Feeding Hills
Routes 57 and 187

Doors open at 7:30 PM

Meeting starts promptly at 8:00 PM

**Please, no smoking during
the meeting! Thank you!**



NO SMOKING



ANNUAL FLEA MARKET

SUNDAY MAY 5th

West Springfield Lodge
of Elks on Morgan Road,
West Springfield, Mass

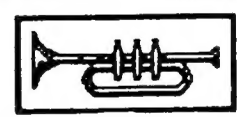
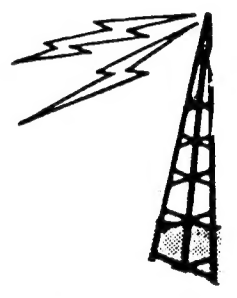
Admission \$1.00

Tables \$3.00

Food and Refreshments available

Talk-in on 147.105 up 600

For more information: Steve Nelson
413-596-8216



NEXT HCRA SPONSORED RADIO EXAMS

SATURDAY MAY 18th

WILBRAHAM REGIONAL HIGH SCHOOL,
MAIN STREET, WILBRAHAM, MA

All classes of amateur license
will be tested. (Including novice!)

Send a form 610 with a \$4.00
check made out to "ARRL-VEC"
to:

Yorke Phillips
K1BXE
235 AMES ROAD
HAMPDEN, MA 01036
413-566-3010



NO WALK-INS!
DEADLINE: APRIL 18

Dues are \$9.00 per season, September thru June. Please mail to: NIAEH,
Greg Stoddard, 1500 Mapleton Avenue, Suffield, CT 06078. Thank you!



CQ DX

by

W1DGJ

CHRISTMAS ISLAND **VK9XB & VK9XG** until April 9 ... TURKEY **TA1A** Saturdays on 15 & 20 cw ... CYPRUS **ZC4MR** most days on 14.226 at 16Z ... NAVASA April 4-9 by **6Y5NR** ... CAMBODIA **XU1SS** active again from Dang Rek Camp Tuesdays and Saturdays ... AFGHANISTAN **UA900/YA6** reported ... WASHINGTON FCC proposal to recind the 30 day waiting period before retaking an exam ... SOUTH SHETLAND **4K1F** on 20 & 40 cw ... RODRIGUES **3B9CD** until end of June ... USPS overseas mail rates now 44 cents per 1/2 ounce ... BURUNDI **9U5JB** on 3.775 at 04Z ... MACQUARIE **VK0GC** now active ... MARION ISLAND no operation this year - no operator available ... ARRL February 160 meter contest had over 60 countries participating ... ARRL Honor Roll plaques now available ... W1 QSL BUREAU Remember to send in additional postage to cover postal increase for envelopes on file ... TONGA **A35EA** until April 2 ... WASHINGTON FCC fined **WD8LEU** \$2000.00 for 80 meter operation using power in excess of 20,000 watts! ... TOGO **5V8WS** by **DJ6QT** ... CLIPPERTON April 3-11 ... FIJI April 15-23 by **JH1RNZ** ... MIDWAY ISLAND until April 8 on 14.220 ... REVILLA GIGEDO **XF4MDX** in April ... CONTEST CQ WPX SSB March 30-31 ... DAYTON HAMVENTION April 26-28 ... MARCH ARRL DX CONTEST Send in your logs today for the **HCRA's** club credit!

VE3KFE/4U 14.160 13Z ... **RA2FC** 14.192 14Z ... **5V7HC** 14.184 21Z ... **3CIYL** 14.202 23Z ... **LU4DXU/CEOA** 14.194 23Z ... **VU2CJ** 14.196 14Z ... **OD5BP** 14.194 19Z ... **7X2AX** 14.192 18Z ... **3B8CA** 14.193 18Z ... **C30LBN** 14.186 14Z ... **JY5CI** 14.248 14Z ... **ZB2GR** 14.227 14Z ... **T77C** 14.223 17Z ...

DEAR CQ DX: I talked with someone who claimed to have worked 322 countries but I can only count 315 on the ARRL's DXCC list. ANSWER: There are only 315 countries currently recognized by the ARRL but an additional 52 countries that no longer exist (Sikkim, Canal Zone, Saar, etc) are on the Deleted Countries List. This means it is possible to have a total of 367 countries worked. Only the Current Countries List counts for Honor Roll credit and you must have at least 306 countries confirmed to qualify. (Editor's Comment-W1DGJ has 347 confirmed!!!)

Tidbits

HCRA licensing classes started with a bang on February 26th. 96 students showed up! ... **KAIKRJ** passed Amateur Extra. FB, Jack! ... Bob Barrett's new call is **KAIMPA** ... April 15th (Tax day!) is the VHF SPRINT for 144 mhz. Goes from 7 pm to 11 pm local time, your grid square is the exchange. ... **KAIKPH** built a new house. Rumors that he moved the radio/computer gear and then went to get the wife/furniture have been denied. ... **NIAFY** received the pretigious Silver Snoopy award at a special breakfast with the astronauts for his contributions to the space program. ... **KIBXE**, **KALEGS**, **KIBE** are private pilots. ... **WB1GLZ** bought an Icom 2AT. ... **KIKI** sent out a newsletter to all hams in the New England division. ... **KAIKPH** passed Extra ... **KAIMCA** passed Tech ... Phil Langlois is now **N1DJG** ... MTARA provided communications for the Holyoke St. Pat's Parade, FB! ...

FOR SALE: Kenwood HF Transceiver, TS830S, with cw filter and spare finals \$650.00
Gent Lam **WA1CQF** 413-783-8537

FOR SALE: Electronic Keyer, Tempo One transceiver with digital readout, 1 KW Heathkit Matchbox, HW8 transceiver by Heathkit, Heath 1KW Linear Amp, Shure mic, 1/4 wave vertical antenna, (trapped 5 bander. Zeke Hooper, **KAL1HN** 783-8941

FOR SALE: YAESU FT-227 Memorizer, 2 meter rig with mike, mobile and base antennas, manual. \$200.00 or B.O. **WB1DLG** 413-569-3440 after 6 pm or weekends.

FLEA MARKET

FRAMINGHAM CIVIC LEAGUE BUILDING
FRAMINGHAM, MASS

Sunday, April 14th

Admission \$2.00 Tables \$10.00 10 AM

FOR SALE: Pace Communicator II, 2m FM mobile transceiver, fully synthesized, 25 watt output, with Drake Touchtone mike, excellent condition, asking \$220.00 Pace 1000M Mobile SSB/AM transceiver, converted to 10m, covers 29.5-29.7 mhz, 15 watt output, asking \$120.00 Ameco TX62, 6m & 2m CW/AM transmitter, 30 watts out, Ameco VFO 621, covers 6, 2, & 220 mhz, Sold as one unit, \$40.00 Tecraft VHF converters for 6, 2, and 220 mhz, Converts down to 10m or 20m band. With extra 1F crystals, asking \$15.00 each Tecraft 220 mhz transmitter, with power supply, 2 watt output, asking \$10.00 MFJ CWF-2 audio cw filter, 3 selectable bandwidths, asking \$10.00 Multi-output High voltage power supply, built for continuous duty operation, exact voltages unknown. Used to power three 4x-150's Free for the taking John AC1T 786-2438 evenings

A Bold New Experiment...

A membership application is printed in this issue. Remember, a repeater member or a regular member are part of the HCRA, just as an associate member is. The groups are separate financially because the membership dues are earmarked for different uses. A regular or associate membership costs \$9.00. This is spent to pay hall rental, print ZERO BEAT, etc etc. The dollar amount is set based on our expenses, even if the member does not participate. Repeater membership dues are spent only to upgrade/improve the communications facilities. If they want other club benefits, like the newsletter, they must pay for them. The philosophy is that those who use something will help pay for it.

It's our hope that most people will opt to pay \$19.00 dollars, and hold both a regular and repeater membership. Keep in mind that the repeater memberships do not officially start until September of 1985, (and expire in September of 1986) so you'll be getting 18 months membership for the price of 12. We are offering this now because we need to know if the support is going to be forthcoming. This is a two year experiment, and at the end of it we'll have to decide whether to keep it or drop it.

WHAT'S HAPPENING

The 440 repeater is undergoing beta testing, with the KC 850 and associated weather gear, etc functioning well. The Station Master antenna is installed and passed all tests. The final site installation should be finished by the time you read this. Phelps Dodge duplexers have been ordered. The six meter linking is being built. This will be switchable to simplex or repeater frequencies by touch tone command. The 10 meter link is half-built, with the ten meter transceiver not ready to use yet.
(449.175 output 444.175 input FM)

The Digipeater has been on the air and running well for several months. New "Packeteers" are coming on the air every month! Final site installation is underway, targeted completion date of early June is reasonable.
(145.010 simplex Packet Radio)

The ATV repeater is undergoing beta testing. This is a home-brew affair, and very professionally done! (It was shown off at the March 5th meeting by Chet and Bob.) A circuit to receive the pictures should be in this issue. If you build it now, you'll be able to watch the space shuttle missions, which they'll be re-broadcasting! The repeater will be installed atop Wilbraham Mountain soon. An amplifier may be installed later, baring building it and technical difficulties.
(426.25 output 439.25 input ATV)

The two meter (K1JJM/R) machine has been operating for some time. The new repeater has arrived. This should vastly improve performance and audio quality. The new machine won't be installed until all testing is done and documentation is completed. Expected installation is about June. A new antenna and receive circuits have been installed at the present machine. Other improvements are planned and will have to wait until the money comes in.
(147.105 output 147.175 input FM)

WHY JOIN NOW

We need your support. Building this communications system will take time, talent, effort and money. The fund raisers planned for the next 16 months can only succeed based on a large membership base. We don't have anyone sending us bags of dough, just average Joe's helping out. If the support isn't there, we'll know state of the art communications are not what hams want. We need your support.

MORE NEXT MONTH!

CLUB NETS BEGINNING ON
K1JJM/R 147.105 up 600

SUNDAY MORNING 9 am ARES NET
Check into the WMEN via 'JJM/rpt

THURSDAY EVENINGS 7:30 pm HCRA NET
Information about area ham radio goings-on! Check in with items for sale, announcements, etc.

We need net control stations! These start effective Sunday April 6.

Tidbits

WB1FVS is getting married next year ... Do you have any fuzzy, out-of-focus, grainy B&W photos of two overweight men shaking hands? Send it into QST, they'll print it! ... KV1C bought a 440 Kenwood rig ... WB1BZW upgrading the station ... W1IQR is a Shriner ... We are looking for rigs for our graduating novices! What do you have gathering dust? Bring it to the Flea Market May 5th, or send in an ad for ZERO BEAT, please ... Congratulations to NICDR, K1LHD, and others for a very successful MTARA flea market! ... Lil Beauchemin is now K1MPS ...



MAKING RADIO HISTORY

Packet Radio in many ways is the leading edge of ham radio technology. Why not tie it in with another high tech exciting ham activity? We have three EME stations in the club. (Only two are using the same band.) Why not try using packet radio for Earth-Moon-Earth????

K1KPH has written the ham who's inventing the protocols the OSCAR satellites will use for packet. A new system for EME should be ready sometime this summer. The baud rate, etc is changable on the TAPR boards, and once the protocol is available, we'll try to make radio history by being the first ever **EME PACKET RADIO!!!** We'll let you know as things progress.

FOR SALE: RG 8a/u COAX

FINEST QUALITY

27¢ per foot in

100 ft sections

Call Jeff Duquette

evenings at 413-569-6739

days: 413-730-3253

FOR SALE: 2 Cushcraft 32-19 19 element Boomer 2 meter antennas with stacking harness and power divider.

2 Cushcraft 424B 24 element Boomer 432 mhz antennas with stacking harness and power divider. Will trade for new KLM LBX series

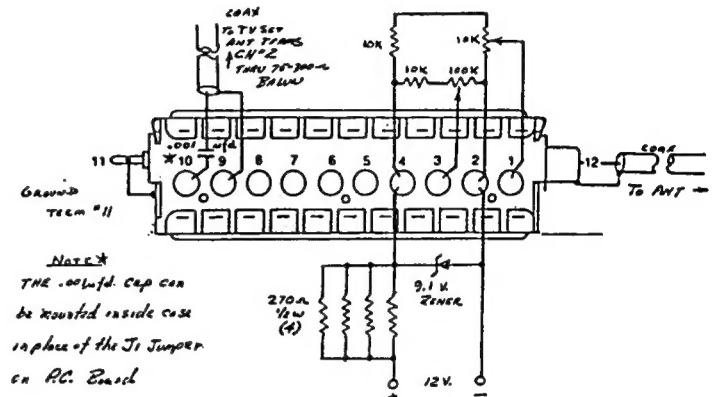
2 meter and 432 mhz antennas, 2 meters for 2 meters, 432 for 432, or \$100.00 for pair. Antennas still up, but will have them down

early in the spring. Fred K1APR

HOME BREW AMATEUR TELEVISION RECEIVER

By Chet Kruczek W1HGJ

The attached schematic shows you how to connect up a Radio Shack (Mitsumi UES-A56F) varacter UHF TV tuner to receive amateur TV in the 420-450 mhz band. You saw this box at the presentation last month, but I'll bring it in again for the April meeting. It's even simpler than it looks here! Call me if you need more information or help. (413) 525-3435



Pin Designation

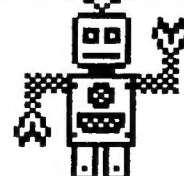
- 1 Tuning volt.
- 2 Ground
- 3 AGC
- 4 V+
- 5 N.C.
- 6 Ground
- 7 RF Out
- 8 AFC
- 9 Ant. Input

Parts Req.

- TV tuner #277-220
1N4739 Zener #276-562
10KΩ Pot #271-1715
100KΩ Pot #271-092
10KΩ Res. #271-1335
270Ω Res. #271-016
Metal box, screws, nuts, etc.

APRIL 12, 1985

HCRA



SHUTTLE
SPACE SUIT
DISPLAY & TALK

Packet Radio

Norm Brooks, K6FO

They call it the future of Amateur Radio. I'm convinced that statement is true.

Packet radio is two or more computers connected through an Amateur Radio link to provide error-free communications. The mind-boggling part is the "link". It could be simplex, or a VHF or HF, or a relay through another station on simplex, or a VHF repeater, or even on a satellite. In every case, if there is communications at all, it is error-free.

I had the privilege of attending the Packet Radio Introduction and Applications Workshop at the Dayton Hamvention, 27 April 1984. Two-and-a-quarter hours were allotted to this seminar. The presentations were so interesting that the time flew by quickly. Bob Neben, K9BL was the moderator who introduced the "high-tech" speakers.

Paul Rinaldo, W4RI, Technical Editor of ARRL, started off with the history of packet radio. We learned that it started in Canada, where amateurs were first permitted to use the ASCII code. A group in Vancouver, British Columbia designed circuit boards to do the job. United States amateurs followed as soon as the FCC authorized ASCII here. A group in Washington D.C. started on a VHF voice repeater. Then a group in San Francisco Bay area set up a dedicated simplex repeater. A high-tech group in Tucson, Arizona brought out boards and software, and the explosive growth of this new form of communication was on!

There was one major problem to be solved. Protocol, or standards for packet radio, had to be established if worldwide communication was to become a reality. Paul said that developing the protocol was probably the most gentlemanly development that ever happened in Amateur Radio. There were no wars. No factions fighting with each other. There has been competition, but it's been healthy competition. Any adrenalin that flowed was productive. The high-tech types that participated had a lot of respect for each other. "That guy's pretty smart; maybe he's right!"

We now have mature software. It's now about a year old. The get-togethers of the packet radio buffs show a lot of maturity. Now they're looking at proposals for networking. That is, tying local systems into a worldwide system.

Most packet radio work has been on VHF, but it is also getting started on HF. Unfortunately, Paul knows of no meteor scatter work being carried on, and packet radio is a natural for meteor scatter. Work is going ahead using OSCAR-10.

(Editor's note: Since this was written, meteor scatter with packet has been done!) In the future, they are planning a dedicated packet radio satellite, which would bring automatic repeating via the satellite between any two amateurs in the world.

How does it work?

Pete Eaton, WB9FLW, of the Tucson Amateur Packet Radio Group then gave us a "gee whiz" introduction to the mode. Packet radio uses channel sharing. You don't have to look for a clear frequency. You can have multiple QSO's going on at the same time on the same frequency. Packet radio provides experimental opportunity. Contacts often include "have you tried...?" Also, for the power of the system, it is relatively inexpensive.

The packet

If we could see a packet, what would it look like? It is data in the middle of a "packet" of information sent out in a very short burst. The data could be anything. Right now it's about one-and-a-half lines of printed words off a CRT screen. In the future, it could be digital voice or digital video - all sent at 50 kilobits a second.

It takes several packets to send an average message, and the equipment acknowledges correct receipt of one packet before it accepts the next one.

The packet has information at the beginning and end called "flags". These flags are simply synchronization. Pete says, "This stuff is flying back and forth so incredibly fast that you have to tell the smart black boxes how to deal with it."

The packet includes two addresses, "from" and "to". Just like a letter in the mail. We use our unique Amateur Radio call signs. Then there is the Frame Check Sequence, or FCS. The black box comes up with a code for each packet of information. On the receiving end, the black box also computes the code. If they agree, there is a very high probability the packet was received accurately. And it's done automatically.

Terminal Node Controller

The black box referred to is the Terminal Node Controller (TNC). It assembles and disassembles the packet. These are the circuit boards developed by Vancouver and Tucson groups, as well as several now being offered by commercial manufacturers. All are excellent. (Editor's note: see the article in this issue about Heathkit's packet board.)

There's also a modem (modulator-demodulator). It converts the computer pulses to audio tones so they can be sent out on VHF. It also does the reverse, converting the received audio pulses back to computer pulses. What does a packet sound like? It's a raspy BRAAAP!

Some amateurs have said, "Why should I buy a TNC, which is another microcomputer, when I already have a computer? Why can't my computer do both jobs?" At first the answer was that it couldn't be done. When you tell that to a high-tech amateur, he goes ahead and does it. Software is now available for your computer to do both jobs.

The scenario

Let's describe the scenario of packet radio at work. Let's say you're in the St. Louis area, where packet radio is on the simplex frequency of 147.555 MHz. If two stations came on that frequency with voice and chatted back and forth, you'd say the frequency was in use. Not so with packet radio. The information is sent in bursts. During the dead air time between packets, there is no reason why other amateurs can't get on and converse back and forth with packet radio too. Remember, the packet has "to" and "from" addresses, so there's no mix-up.

All stations have error-free communications. Each pair of stations need not even know the others are there on the same frequency. When a lot of packets go back and forth, it sounds interesting. People with scanners stop and listen and wonder what's going on.

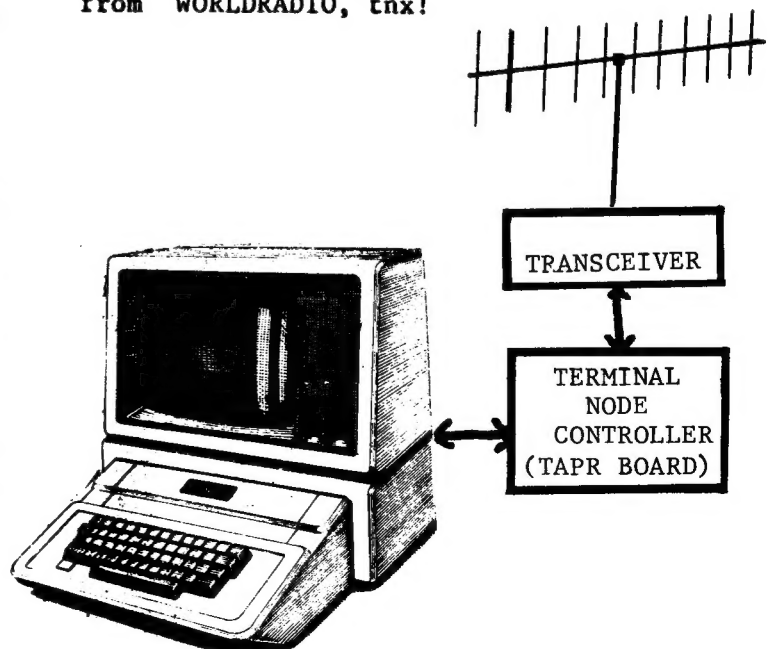
So far, we assume simplex operation. We can put a repeater in a high spot and use it too, on the simplex frequency. The repeater stores the packet in memory for a second and sends it out again on the same frequency. No desense! No duplexers! CW identification is no longer required. Back when it was, amateurs coming across the packet signals would hear the CW identification and assume it was a regular repeater. The first thing they'd try to do was "kerchunk" it. They'd go up 600 and down 600kHz and it wouldn't "kerchunk". They would then check the Callbook and the telephone book and call and say, "There's something wrong with your repeater!"

You can have multiple simplex repeaters on the same frequency, but not in the same geographic area. This drives frequency coordinators wild. The TNC's do something a lot of amateurs don't do - they listen before they transmit.

Do we call CQ/? No. In packet radio we "connect". However, there is a bulletin mode which invites other stations to call you.

Who knows? Some day you and I may "connect" on packet radio!

from WORLD RADIO, tnx!

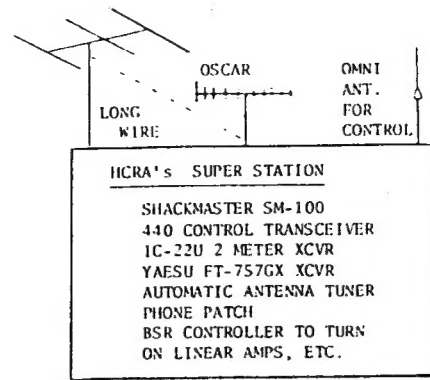


SOMETHING NEW

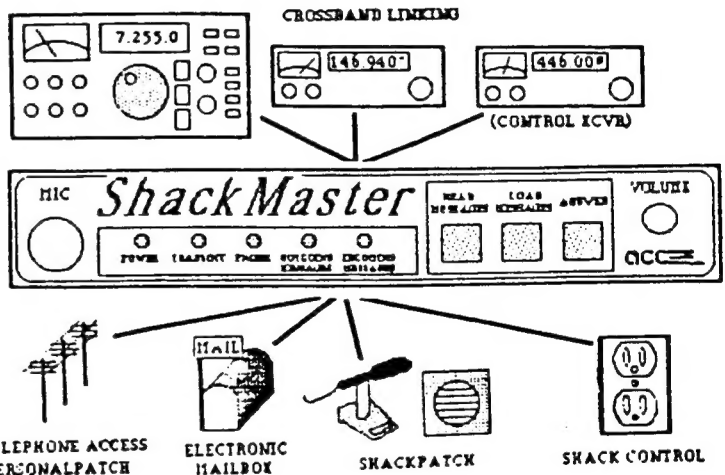
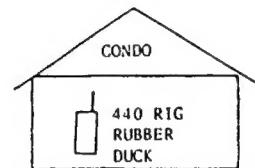
You know him. He was very active on the HF traffic nets, never missing a session. BPL every month listed him in the top ten. Then retirement came, and the slip while shoveling snow. A minor break, but the wife and kids convinced him it was time to go "condo". No lawn to mow, snow to shovel, it sounded OK to him. Ah, but once they moved in- no more ham radio! No antennas allowed, period. Can't talk with the pals, no cw traffic nets, what's an active ham to do, shrivel up and die?

The HCRA might be able to help! New technology allows that condo-bound ham to use a 440 rig to tie into a state of the art amateur station. Cross band linking to an HF transceiver, linears, top of the line antenna systems, and two different VHF/UHF transceivers is possible today. Set the band and mode, and tune around for a clear spot. Work DX, OSCAR, check into the traffic nets, anything is now possible! An electronic mailbox can be used to leave messages for the other users. ("Left the rig tuned to that new African station you wanted to work, Fred") Touch tone access via a handheld 440 rig or the telephone lines goes to a computer controller called the "Shackmaster". It does even more than we can mention in this short article. Read the attached article, "A New Way of Life" for more information.

How would the new HCRA repeater group implement this? Well, it costs money, we estimate about \$3,000.00. If six hams each put up \$500.00, we'd set up a "Shackmaster" and equipment on a good site, with good antennas. This state of the art, top of the line station would be available to those six hams day or night. The club would own the equipment and maintain it. In the future we'd make use of it available for others at an additional fee. Charter members would pay nothing beyond the initial donations, and their annual dues. What do you think? We'll send you additional information for an SASE. Let us hear from you if you're seriously interested after reading the articles. Send your comments to Zero Beat, c/o the address on the issue.



CONTROL LINK
Uses Touch tones
to do everything!



The SHACKMASTER is manufactured by ACC. (Address below) When you select a band, mode, and frequency by using touch tone commands, a voice synthesiser confirms your choice! This is an exciting new area in amateur radio. People own airplanes together and there's no reason why we can't share a super amateur station, too!

You can write to these people for more information.

ACC advanced computer controls, inc.
10816 Northridge Square
Cupertino, CA 95014
(408) 749-8330

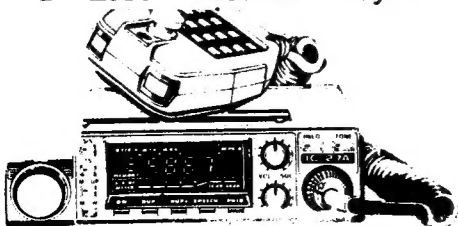
A NEW WAY OF LIFE.

Much of the fun of FM operation is that you can do it anywhere. Small, lightweight handhelds and good repeaters reduce the "FM shack" to a size that you can carry, clip on your belt, or stash away in a briefcase. But the HF station, and a high performance VHF/UHF station, with their high power rigs, towers, and antennas, are a bit bulkier! That means that you've got to be at home, sitting in front of the equipment in order to use it. What a waste!

Imagine being able to carry around your home station as easily as you can carry your "FM shack". That's just one of the things that SHACKMASTER lets you do. By providing a complete interface between up to three transceivers, ShackMaster crossband links you, from your handheld (or mobile VHF/UHF rig) to your high performance equipment at home, including your HF station.

Crossbanding operation can be done on a VHF/UHF simplex frequency, on a pair of frequencies for full duplex operation, or through a repeater. Since you can't transmit and receive at the same time on one frequency, simplex operation is made possible through Shackmaster's control window. Every few seconds, your home control transceiver stops transmitting for a short time to listen for you (after notifying you with a "beep"). If you grab the window, you can keep it to enter control commands. The window timing is fully programmable so that you can optimize operation with your particular equipment, and can be as short as a few milliseconds.

If you have two VHF/UHF transceivers at home, and carry two with you, you can operate HF crossband full-duplex. Commands and audio can be sent on one frequency to ShackMaster, and you can listen continuously to your HF rig on the other frequency. Full duplex operation eliminates the need to synchronize to the control window, for a more natural style of operation.



Casual operation through a repeater to your home station can be done similar to simplex operation, extending ShackMaster's usable range. For extensive repeater operation, you can benefit from ShackMaster's full duplex mode to again eliminate the control window. If your repeater has a remote base, bring it up in Receive Only on the frequency your home control transmitter is on. Your home control receiver should be listening on the repeater's output frequency. In this way, again, the control window isn't needed, and you can enter commands without the need to synchronize to the control window.

ShackMaster supports remote control commands including frequency entry and interrogation, scanning at three rates, bumping frequency up and down, and mode selection. You can even ask the control transceiver to QSY.

Unfortunately, we can't work magic, so the HF transceiver used with ShackMaster needs to have some form of external control capability. Currently, we directly support the ICOM IC-751, with the Yaesu FT-757GX almost ready, and the Yaesu FT-980 to follow. Transceivers without external control provisions are difficult to externally control!

ShackMaster crossband linking applications include:

- * Use your HF station anywhere around the house, around the yard, or around town for freedom and mobility (be with the family instead of cubbyholed in the shack), for nets, skeds, DXing, general ragchewing
- * Operate HF mobile through your home station - offers higher performance and eliminates the need for a separate HF mobile rig (you can still take your home rig mobile on long trips)
- * Share your station with several friends, split the costs of the equipment.
- * Locate your HF station at a remote location to avoid antenna restrictions, TVI, etc.
- * Provide reliable HF band access for your local ARES or RACES organization for use during emergencies

(tnx Advanced Computer Control newsletter)

NOMINATIONS FOR HAMPDEN COUNTY RADIO ASSOCIATION'S HAM OF THE YEAR.

Return the form below, or a postcard to
ZERO BEAT, c/o the address on the upper
left of your mailing label.

Rules:

1. Any licensed radio amateur may be nominated.
2. Only HCRA members may nominate someone.
3. Only HCRA members may vote in the election.

SPECIAL NOTE: The Board of Directors feels very strongly that activities the membership does not support should be dropped! Interest in the Ham-of-the-Year award has been very poor, and voting sparse. If a minimum of six nominations are not received, this award will be cancelled this year. Of course, it is possible that there is no one you feel should be nominated.

If enough interest is there, ballots will appear in the May issue of **ZERO BEAT**, and voting will be at the May 5th flea market. (or by mail) The award is traditionally given out at the June club banquet.

I nominate _____,
Name Call

to be placed on the ballot for the Hampden
County Radio Association's Ham-of-the-Year
award.

Signed: _____

DONATION SOLICITED

The HCRA is seeking the donation of Drake TR-33 transceivers for use in digipeaters. They are an excellent radio for packet digipeaters. We're thinking of putting up some slave machines. Do you have a working TR-33 you'd care to donate? We'll give you a tax receipt for its fair value. Send it via UPS to Jeffrey J. Duquette, K1BE, 26 Iroquois Dr, Southwick, MA 01077 or call 413-569-6739 to arrange pickup. Many thanks!



NOBARC FLEA MARKET

Sunday May 19th

Dalton American Legion

Route 9, Dalton, Mass.

Admission \$1.00 XYLS, YLS, & Children Free
Some tables are available for free, first
come first served. Talk in on 146.91

NEW QSL SERVICE BEGINS OPERATIONS

There's a new outgoing/incoming QSL service about to debut, called "**100% QSLs**". They'll be hitting all the ham magazines with full page ads this month. Here's how it works: Given the premise that getting a QSL card is sometimes harder and more time consuming than working that rare DX, 100% QSLs lifts the bookkeeping and postage burden from the ham. All the ham has to do is send a copy of his/her log page indicating which contacts are to be QSL'ed. (Your own QSL card may be substituted, of course.) Then 100% QSLs takes over from there. They send your card, or one they make up for you, to the DX stations. Here's the good part - They guarantee a return card within thirty days! (They don't guarantee that the card will actually come from the station, however.) In the small print they also indicate that, since DXCC credit is given for countries, not specific stations, they may, unless instructed otherwise, substitute a QSL card from another station from that same country.

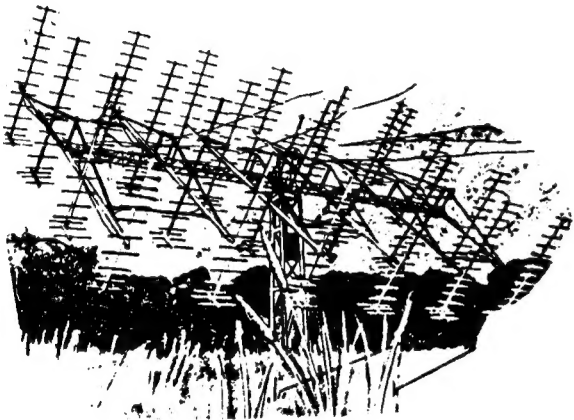
For the hams who can't wait for the mails, they will accept major credit card orders via their phone line (212) 976-2727. The price is steep. It is predicted that each card will cost five bucks, with discounts for orders over 10 cards.

FOR SALE: Estate of Pat Foley, N1AJZ
YAESU FTD560 Transceiver, Homebrew KW
Transmatch, QRP 40-meter Transmitter,
Capacitor tester, Vacuum tube voltmeter,
Speakers, microphones, and station
accessories.

Would like to sell as a complete station.
Karen Foley (413) 734-4877

8TH ARRL INTERNATIONAL EME CONTEST

After seeing slides at the club meetings showing all those antennas, I'll bet you thought they were just for melting clouds! Not so! **W1RWU**, (with AC1T and K1KPH,) racked up an impressive 182,700 points on 432 mhz. Frank and the gang worked 63 stations using 16 stacked Yagi antennas. This was the eighth running of the Earth-Moon-Earth contest, and the level of activity was a real surprise. **K1FO** worked 52 stations for a score of 130,000 on 432 mhz. Fine job, one and all!!



A CHANCE TO MAKE RADIO HISTORY

The West Kent Amateur Radio Society is planning a major DXpedition for a two week period beginning August 7th. They're going to set up a station on the West coast of Ireland and attempt the first-ever transatlantic contact on 144 mhz! With our very own club station set up for EME work on 144 mhz, and feeding those beautiful stacked Yagis atop the 80 foot tower with 1,000 watts, what better choice to help them make history? **W1NY** has a state-of-the-art setup and a good chance to make that elusive contact. So sons of the Emerald Isle, are you with us? Sign up with Art Zavarella, **W1KK**, 413-786-9115, or drop a postcard to the ZERO BEAT address. Then we'll send off a letter to the West Kent group and set up the schedule.

"Quick As A Wink" Printing & Sales Co.



Printing • Copying • Addressing
• Specializing in Newsletters •
Also Business Cards • Tickets • NCR Sets
What Else Have You?
- Free Parking at Our Door -

FRANK H. KOZAK

ROBBIN J. KOZAK

573 Union Street West Springfield, Ma. 01089

TELEPHONE (413) 736-8184

PACKET KIT PREVIEW

Heath Corp has announced they will be marketing the TAPR board for use in packet radio as Heathkit HD4040. This TAPR TNC kit will sell for \$299.99 with a box and should be available about the second week in April. Complete instructions on how to connect up to any rig/computer will be included. Would you be interested in trying to get a group discount? Contact any board member, or send a postcard to **ZERO BEAT**.

HCRA MEMBERSHIP as of 3/4/1985

by N1AEH (167 members)

NAME	CALL	NAME	CALL
KRASSLER, ADOLPH		HUGHES, GEORGE	W1ALL
NORMAN, GARY	AB11	SPATES, JIM	W1ARA
BALBONI, JOHN	AC1T	NOBLE, PERCY	W1BVR
PASSBURG, OLIE	AK1C	MERENSKI, HARVEY	W1BXS
MALNER, JUEGEN	DK1TH	LUKOWICZ, WILLIAM	W1CJX
DUQUETTE, JEFF	K1BE	LUKOWICZ, MIKE	W1CJY
GRAVEL, ROBERT	K1BUB	RESSETTE, ROBERT	W1CKY
PHILLIPS, YORKE	K1BXE	WALKER, KEN	W1FAB
CARPENTER, PHIL	K1DFC	HILES, AL	W1GQP
DIDOMA, FLORIAN	K1EPI	TILTON, ED	W1HQQ
ROWLISHEN, STEVE	K1FO	KRUCZEK, CHET	W1HJY
SHERMAN, JOHN	K1GTE	WEBB, L.A.	W1HOD
LANGVIN, LAWRENCE	K1GJU	CUTTING, HOWARD	W1JWV
PEACOR, NORMAN	K1JLJ/K1LV	ZAVARELLA, ART	W1KK
DIERENDERFER, DICK	K1JUL	BARRETT, THOMAS	W1KUE
MOLOS, RICHARD	K1KQO	GORDON, BOB	W1KUL/W1UKR
MCCONKEY, MARVIN	K1MAL	PADDEN, WILLIAM	W1MDL
SHEEHAN, JOHN	K1NVC	STEPHENS, BOB	W1MM
YOUNG, MR	K1NWE/K1UOR	ADOLPHSON, BOB	W1NLE
CARUTO, PAUL	K1PKZ/K1NHY	BOUDREAU, JOE	W1NNO
JACIOM, WILLIAM	K1QW	WHITE, EDWARD	W1NPL
WALSH, GEORGE	K1RBS	ANDREWS, WESLEY	W1NQC
MAYO, BOB	K1SUD	GABOIS, BOB	W1NYP
WING, PAUL	K1WVX	STEVENS, DICK	W1QWJ
STEFANIK, FRED	K1APR	WALCZAK, WALTER	W1RDC
GAMACHE, RONALD	K1BPT	GLEASON, PAT	W1RED
DESANTIS, FRANCIS	K1CAX	WITOMSKI, TED	W1RLV
SHAPRAS, PETER	K1CDS	LOVE, BILL	W1TH
SAMPLE, WILLIAM	K1CQL	FOSTER, ED	W1TTL
BROUGH, BOB	K1CRX	DOWNING, DICK	W1TXS
BEHRENS, RICHARD	K1CTM	JOHNSON, DON	W1UPH
PRENTICE, LES	K1DNK	JUNKINS, CLIFF	W1UXK
NADEAU, FRED	K1DNI	BRODEUR, LEO	W1VNE
COVER, MUREL	K1ECJ	LITTLE, BOB	W1WLE
MORSE, HARVEY	K1EGS	PURSELOVE, AL	W1YI
MCCARTHY, BILL	K1ENS	LAM, GENT	W1YCF
PASQUINO, ANNE	K1ELU	MCDONALD, PHIL	W1YCTO
WOODS, CLEORN	K1FDE	PHONIX, BOB	W1YDS
LAMORDE, RUSS	K1GIP	POTTS, GARY	W1YDR
CARPENTER, NED	K1GTI	RICH, ALAN	W1YEW
CHARTIER, ROLAND	K1GYT	NELSON, STEVE	W1YEV
ALWARD, ANDY	K1HPI	FALARDEAU, VINCE	W1YGV
CARLSON, LARRY	K1HUS	BENG, STEVE	W1YHT
KUC, THEODORE	K1IOS	DEKTER, FRED	W1YJR
ARCHAUBAULT, BOB	K1JUD	STROMGREN, KEVIN	W1YJU
CHANDLER, ROBERT	K1JEA	TILBE, ALBERT	W1YJD
CIRZAN, RICHARD	K1JEB	CHISTOLINI, JOE	W1YLS
FINNIE, JAMES	K1JEC	GRIFFIN, GERRY	W1YPT
WEBBER, RAY	K1JUM	FELPER, BRUCE	W1YPU
GRADY, KEN	K1KEN	POTTS, FRANK	W1YRU
MCCORMICK, BOB	K1KPH/K1MCA	FARLEY, DON	W1YSY
PLATINITS, JIM	K1KRJ	JACKOWSKI, AL	W1YSH
GRASSETTI, CARLO	K1LGI	BEAUREGARD, PETE	W1YSO
CAMPANA, PETER	K1LUD	OVERSTREET, ED	W1YUV
ALHEIM, RAY	K1LUR	KIDA, LARRY	W1YUZX
CURRIE, LINDA	K1LUS	TIPPETT, BOB	W1YVAH
LETO, ALLAN	K1LAT	RILEY, BILL	W1YVH
BROGETTA, DOMINIC	K1LZD	LUCARDI, BILL	W1YSS
BARRETT, BOB	K1MFA	RENNER, LOUIS	W1YWK
WILSON, BOB	K1NIN	OUTE, TRYON	W1YCA
THOMAS, V. KURIAN	K1NZW	LOHMEYER, JACK	W1YVK
PIATEK, FRANK	K1BIAZ	KRESS, PAUL	W1YKZ
ISHAM, DAVE	K1BHU	NAURNEY, LAD	W1YJC
MARKVART, JIM	K1BYC	MURRAY, MR	W1YAP/W1YDS
TOURIGNY, LEO	K1VIC	LEWIS, DON	W1YBD
SAVOY, LARRY	K1CIE	NICKOLLS, KEN	W1YBZ
ROY, ROBERT	K1ABJ/K1LVV	DARSNEY, SCOTT	W1YBC
STODARD, GREG	N1AEH	GESNER, MALCOLM	W1YCL/W1YCLN
COURNOYER, NORMAN	N1AFY	NAREAU, WAYNE	W1YCN
FOLEY, PAT	N1AJZ	ZERDECKI, RUDY	W1YCX
VALL, MARVIN	N1CER	NELSON, GEORGE	W1YDL
RUDGE, DAN	N1CHS	PPAFF, GERRY	W1YDT
DRAKE, ALBERT	N1COT	SUDAN, BERT	W1YDTZ
SHEAT, WARREN	N1CRO	BEAUCHMIN, RON	W1YETS
FLYNN, DAVID	N1DEG	BEAUCHMIN, MOE	W1YFIP
JOHNSON, FRANK	N1FJ	ATKINS, GEORGE	W1YFX
FOREST, NORM	N1PF	BURK, RAY	W1YGLX
RODMICZ, STEVE	N1SR/N1ACS	TEDESCHI, AL	W1YGLZ
		SANDOCK, JACK	W1YCTR
		JOHNSON, BOB	W1YHAB

HAMPDEN COUNTY RADIO ASSOCIATION

Membership Application

REGULAR MEMBERSHIPS

FULL MEMBER \$9.00 PER SEASON ☐

This class is open to any licensed radio amateur accepted into membership by the Board of Directors. The right to vote, hold office, receive the club newsletter, and all other privileges are included. NO REPEATER PRIVILEGES ARE INCLUDED IN THIS MEMBERSHIP!

ASSOCIATE MEMBER \$9.00 PER SEASON ☐

This class is open to anyone interested in amateur radio, but who does not hold an amateur radio operator's license. They will receive the club newsletter, but may not vote nor hold office. NO REPEATER PRIVILEGES ARE INCLUDED IN THIS MEMBERSHIP!

FAMILY MEMBERSHIP \$14.00 PER SEASON ☐

Any number of FULL or ASSOCIATE members in one household. The club newsletter is mailed to only one address.

REPEATER MEMBERSHIPS

REPEATER MEMBER \$10.00 PER SEASON ☐

This class is open to licensed radio amateurs accepted into membership by the Board of Directors. ALL repeaters affiliated with the club shall be available to these members. Repeater members may NOT vote, hold office, and will only receive the club newsletter if they pay an additional fee. Repeater members' dues are used to support the repeaters sponsored by the club. Repeater members may optionally earmark their dues for one specific repeater.

FAMILY REPEATER MEMBERSHIP \$15.00 PER SEASON ☐

Any number of REPEATER MEMBERS in one household.

CLUB NEWSLETTER \$5.00 PER SEASON ☐

This option is available for those Repeater or Family Repeater members who would like to receive ZERO BEAT but are not Regular HCRA members. DO NOT CHECK THIS BOX IF YOU ARE A REGULAR, ASSOCIATE, OR FAMILY HCRA member as ZERO BEAT is included with those memberships.

The club season runs from the first of September through the annual meeting in June. Meetings are held monthly at the Feeding Hills Congregational Church. The November meeting is the auction and the May meeting is the flea market. Other meeting topics vary, covering all aspects of Amateur Radio. The club's award winning newsletter, ZERO BEAT, is mailed to regular club members monthly. Volunteer examinations through the ARRL program are regularly scheduled along with license classes from Novice to Extra. The HCRA club station, W1NY, is active in many operating events. The HCRA sponsors state of the art communication facilities covering the greater Springfield area with ATV, packet and FM repeaters operating on 10m, 6m, 2m, and 70cm.

The following information regarding your interests is optional:

Please CIRCLE all that apply:

DX	Contests	VHF	ARES	HF
RACES	OSCAR	Traffic	Repeaters	
FM	SSB	CW	ATV	Packet
RTTY	SSTV	FAX	AMTOR	Experimental

We always welcome your comments. Feel free to express yourself here:

NAME: _____ CALL: _____
 ADDR: _____
 CITY: _____ STATE: _____ ZIP: _____

Please CIRCLE one choice for each question:

ARRL Membership?	NO	YES	LIFE
License Class?	Novice	Tech	General
	Advanced	Extra	Studying

Dues enclosed: \$ _____ Donation: \$ _____

Your much appreciated donation is tax deductible!

FOR OFFICE USE ONLY

Accepted: _____

Rejected: _____

Return to:

Hampden County Radio Association
 P.O. Box 482
 West Springfield, MA 01090

CALENDAR OF EVENTS

- March 31th *NOBARC Club Auction
- April 10th WEDNESDAY =>ARES Sponsored Spotting Severe Weather Seminar Granger School 7:30 pm
All are invited to attend!!!! *Feeding Hills, MA*
- April 12th FRIDAY =>HCRA Meeting NASA SPACE SUITS
A "Must See" presentation!
- April 14 SUNDAY Framingham Flea Market
Framingham Civic League Building
- April 17th YANKEE VERNON NUCLEAR PLANT TEST
- April 19th **MTARA MEETING HERO THE ROBOT
- April 28th *NOBARC club meeting
- May 5th SUNDAY =>HCRA SPRING FLEA MARKET<=
WEST SPRINGFIELD LODGE OF ELKS
Tables \$3.00 Admission \$1.00
Benefits ZERO BEAT Printing costs!
- May 17th **MTARA MEETING PACKET RADIO BY K1KPH
- May 18th SATURDAY =>HCRA VEC EXAMS<=
WILBRAHAM, MASS Deadline for 610 is 4-18!
- May 19th SUNDAY NOBARC FLEA MARKET
AMERICAN LEGION, RTE 9, DALTON, MASS
- June 7th FRIDAY =>HCRA ANNUAL MEETING AND AWARDS BANQUET
Buffet Style Tickets \$4.00
- June 7th & 8th ARRL VHF CONTEST
- June 22nd & 23rd ***FIELD DAY 1985***
=>1. HCRA FIELD DAY (WINY)
WESTERN MASS LAW ENFORCEMENT ACADEMY

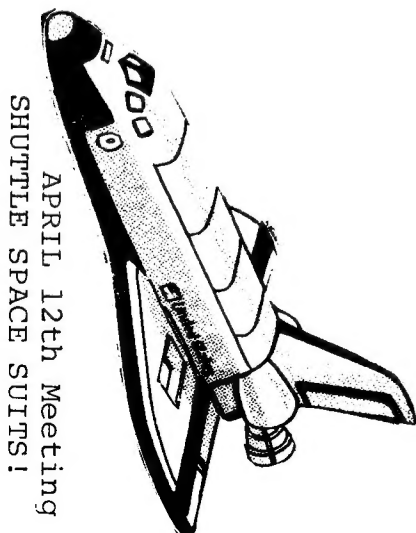
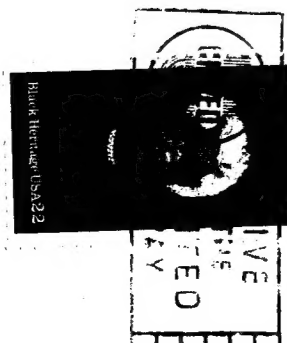
=>2. HCRA FIELD DAY (WITM)
MIDDLEFIELD FAIRGROUNDS,
MIDDLEFIELD, MASS

NOBARC FIELD DAY (K1FFK)
WINDSOR, MASS
- August 7th IRELAND TRANSATLANTIC TEST
- August 11th SUNDAY NOBARC FLEA MARKET
AMERICAN LEGION, RTE 9, DALTON, MASS
- *NOBARC meets at the Polish Community Center, Pittsfield, MA
- **MTARA meets at Holyoke Community College, Holyoke, MA

Hampden County Radio Association
c/o Jeffrey J. Duquette K1BE
P.O. Box 346
Southwick, MA 01077

FIRST CLASS

ACIT E Y 10/85



APRIL 12th Meeting
SHUTTLE SPACE SUITS!